Claims

1. An implantable device, including: a cuff positioned to contact the outer surface of a tubular body carrying blood; and at least one sensor which measures blood pressure encapsulated within said cuff.

2. The device of claim 1, wherein said device does not occlude or adversely affect the flow of blood or blood pressure within a patient's circulatory system.

3. The device of claim 1, wherein said device includes at least two sensors and said sensors are aligned axially in respect to said tubular body.

4. The device of claim 1, wherein said device includes at least two sensors and said sensors are aligned radially in respect to said tubular body.

5. The device of claim 1, wherein said cuff is integrally formed within a cannula.

6. The device of claim 1, wherein said device is connected to a controller that determines the pumping state of said heart from changes in said pressure.

7. The device of claim 1, wherein said cuff comprises: silicone, velour or Dacron™.

8. The device of claim 6, wherein said device cooperates with a blood pump.

9. The device of claim 8, wherein said blood pressure is used in a feed back mechanism to control the pumping speed of said blood pump.

10. A system for controlling an implantable blood pump including: an implantable blood pump in fluid communication with a circulatory

system to assist heart function; at least one inlet pressure sensor for measuring pressure of blood flow in an inlet of said implantable blood pump; a controller operatively connected to said inlet pressure sensor and said implantable blood pump; and said controller estimates the current pumping state of the heart from minimum of said pressure over a period of time and adjusts the speed of said implantable blood pump based on said current pumping state.

11. The system of claim 10, wherein said inlet pressure sensor is encapsulated within a cuff adapted to contact the outer surface of a tubular body carrying blood.

12. The system of claim 10, wherein said period of time includes at least one cardiac cycle.

13. The system of claim 10, wherein said inlet pressure sensor detects a limited range near to the minimum of said pressure over a period of time.

14. The system of claim 10, wherein said inlet pressure sensor operates in a range between +50 and -50 mmHg.

15. The system of claim 10, wherein said controller adjusts pumping speed to minimise under-pumping and over-pumping by the implantable blood pump.

16. The system of claim 10, wherein said controller calculates blood flow from back EMF generated by the implantable blood pump, when in use.